

Serial No.: 10/712,729
Reply to Office action of December 29, 2005

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REMARKS

Applicant respectfully requests entry of this Amendment and reconsideration of the pending claims. Claims 50-56 were withdrawn in response to an oral election to a restriction requirement, and are hereby cancelled. Further, claims 21-71 are cancelled to advance prosecution. Accordingly, claims 1-20 are currently pending.

A replacement abstract is provided in conformity with MPEP 608.01.

Applicant cancelled Claims 21-49, with traverse, to advance prosecution. However, Claims 21 and 34 were in proper independent format, and had a claim scope that differed from every other claim. That the characteristics of a claim may be "already identified in" another claim is not a proper grounds for rejection. Claim 2 is amended to correct the dependency.

Claim 1 is amended to address the 35 USC § 112 rejection, and claim 34 is cancelled. Claim 7 is amended to address the 35 USC § 112 rejection changing the dependency, and claim 37 is cancelled. Claims 70 and 71 are cancelled.

Claims 1-8, 10, 20, 57-66 and 71 were rejected under 35 USC § 103 as being unpatentable over Miller in view of a plurality of references. Applicant notes that claim 1 defines "a cylindrical support rod having a central portion, said central portion having a surface roughness of from about 0.1 micron to about 4 microns, wherein said central portion has an ovality of up to about 0.5 mm and a bow of up to about 0.7 mm/m along a longitudinal axis of said support rod assembly". That is, the *support rod* has the characteristics of the bow and ovality.

Further, the Office Action does not explain how the mandrel of Miller is a support rod as claimed. Relatedly, Miller discloses "After the soot cylinder 11 has been consolidated to form a solid glass tube, the *mandrel 12 is removed* and the tube is used as a substrate; that is, core material is deposited within the tube by the process shown schematically in FIG. 3." If the mandrel is removed in Miller, it cannot be present to "straightens and supports said quartz tube and prevents tapering of said inner diameter due to creep" as defined in claim 1.

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The element of bow is addressed in paragraph 22.a. in view of Monberg. However, the Office Action appears to characterize a bow of 0.3 mm/m of the object being worked on (the sintered quartz tube) and projects that bow requirement on a structurally dissimilar element, namely the central portion of the claimed support rod. Clearly the claimed support rod is not the disclosed quartz tube of Monberg, and thus any bow measurements of the quartz tube do not disclose, teach or suggest a bow of a support rod as claimed. Ovality isn't mentioned until another reference is added, and certainly no relationship between the bow and ovality is given in either of Miller or Monberg.

Yokokawa is added to address the surface roughness element. However, the Office Action admits that "Yokokawa discloses a cylindrical quartz tube with high circularity at any position along its longitudinal direction." There are at least two flaws here. One is that by adding Yokokawa to disclose the surface roughness, there is the teaching away from ovality toward circularity. Applicant submits that the entire reference must be considered and the particular claim elements cannot be cherry picked from a bouquet of references – if the surface roughness teaching is available, then some explanation needs to be provided to explain the need for circularity. The second flaw is pointed out in the Office Action, which states that Yokokawa discloses the surface roughness for a different element (the quartz tube) and not for the *support rod* as claimed.

The teaching of Lum is added to address the ovality, but again the ovality discloses is for the quartz tube, not the *support rod* as claimed.

O'Brien is not relied on to cure any of the deficiencies discussed hereinabove. Rather, O'Brien is presented to disclose a graphite mandrel. The corresponding claim (claim 3) depends from allowable claim 1, and is allowable for at least the reasons that claim 1 is allowable.

Kyoto is not relied on to cure any of the deficiencies discussed hereinabove. Rather, Kyoto is presented to disclose an inert environment and/or inert material. The corresponding claim (claim 20) depends from allowable claim 1, and is allowable for at least the reasons that claim 1 is allowable.

Because of the foregoing, at least the support rod has not been demonstrated in the prior art, either in individual references or in the combination of references provided. Particularly, the attributes and characteristics associated with the quartz tube workpiece

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disclosed in the art references do not disclose, teach, or reasonably suggest at least the support rod as defined in claim 1, and all the claims that depend thereon. Applicant respectfully requests that a notice of allowability be issued for the pending claims.

Claims 3-7, 21-25, 34-38, and 59-36 were rejected over Miller based on Kyoto. Only claims 3-7 are pending, and each of which depends from allowable claim 1.

Claims 8, 10, 28, 39, 64, and 71 were rejected over Miller alone. Claims 8 and 10 are pending, and each of which depends from allowable claim 1. Applicant does question the modification insofar as the motivation is given as protection from reactive gases, which is curious as the motivation to use the materials (as given earlier in the office action) in an inert environment stands in contrast. It does not appear reasonable to combine references such that the motivation to combine one is a reactive corrosive environment, and the other motivation is to provide an inert environment.

Claims 57 and 65 are cancelled. Claim 66 is cancelled.

Claims 9-12, 19, 26-27, 29-30, 40-43, 67-68 and 70-71 were rejected under 35 USC § 103 as unpatentable over Miller in view of Monberg and the other art references discussed and cited hereinabove with reference to claim 1. Only claims 9-12 and 19 are currently pending, all of which depend from allowable claim 1. Further, and as noted hereinabove, the Office Action does not clarify how the mandrel of Miller anticipates or obviates the support rod, or assembly, as claimed.

Claims 13, 31, 44 and 69 were rejected under 35 USC § 103 as unpatentable over Miller in view of Monberg and the other art references discussed and cited hereinabove with reference to claim 1, and further in view of Rupert and Baniel. Only claim 13 is pending, and claim 13 depends from allowable claim 1. Applicant is unable to locate the rationale for stitching together so many references, as one of ordinary skill in the art would have to do, and is unclear as to how the patchwork quilt of references would be formed to address bubble formation and perfection of fit. Was that a problem with Miller? Miller doesn't say.

Claims 14-15, 32, and 45 were rejected under 35 USC § 103 as unpatentable over Miller in view of Monberg and the other art references discussed and cited hereinabove with reference to claim 1, and further in view of Rupert. Claims 14-15 are pending and depend from allowable claim 1. If the two retaining portions of Rupert solved some

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deformation or sagging problem with Miller, there would be no motivation to use a support rod as defined in claim 1. Conversely, if one of ordinary skill in the art had a support rod addressing deformation or sagging, it could not be obvious to further add the retaining portions to address a problem previously addressed.

Claims 16-18 and 46-48 were rejected under 35 USC § 103 as unpatentable over Miller in view of Monberg and the other art references discussed and cited hereinabove with reference to claim 1, and further in view of Lane. Claims 16-18 are currently pending, and depend from allowable claim 1.

Because of the foregoing, the claimed invention has not been disclosed, taught or suggested, either in individual references or in the combination of references provided. Applicant respectfully requests that a notice of allowability be issued for the pending claims.

Should the Examiner believe that anything further is needed to place the application in condition for allowance, the Examiner is invited to contact the Applicant's undersigned representative at the telephone number below. Any additional fees for the accompanying response are hereby petitioned for, and the Director is authorized to charge such fees as may be required to Deposit Account 07-0868.

Respectfully submitted,



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